

CLAIMS

1. Object with a surface that is easily cleanable as a result of being double-coated, with the outer coating containing a hydrophobic component capable of reacting with free -OH groups and the inner coating being an inorganic sol-gel coating,
characterized in that the outer hydrophobic coating is applied to a very reactive inner sol-gel coating that has been only partly dried at a moderate temperature of at the most 100 °C and is chemically firmly anchored to it by condensation reactions, and only the double-coating system on the surface of the object is baked at a temperature above 50 °C.

2. Process for preparing an object with an easily cleanable surface by double-coating comprising the steps of

 - applying an inner inorganic sol-gel coating directly to the surface of the object by a conventional process in a first step,
 - drying the inner sol-gel coating at a temperature between room temperature and 100 °C,
 - by a known process, applying to the reactive inner sol-gel coating in a second step an outer hydrophobic coating containing a component capable of reacting with free -OH groups, and
 - baking the double-coating system onto the surface of the object.

3. Process as defined in claim 2 whereby an inner sol-gel coating with a thickness of 10 nm to 1 µm is applied.

4. Process as defined in claim 2 or 3, whereby the inner sol-gel coating is applied by spraying or dipping.

5. Process as defined in one of claims 2 to 4, whereby the sol-gel coating is dried within a time period of preferably < 6 h depending on the temperature used.

6. Process as defined in one of claims 2 to 5, whereby the surface to be coated is first activated, for example by a physical method such as corona discharge, flame treatment, UV treatment or plasma activation and/or by a mechanical method such as roughening or sand-blasting and/or by a chemical method, such as etching or applying one or more suitable adhesion-promoting coatings from the gas phase or liquid phase.

7. Process as defined in one of claims 2 to 5, whereby a perfluorinated silane or a sol-gel mixture with a perfluorinated silane is applied to the dried inner coating as the outer coating.

8. Process as defined in claim 7, whereby the outer coating is applied by spraying.
9. Process as defined in claim 4 and claim 8, whereby by controlling the flow time and drying time of the inner sol-gel coating the spraying parameters are adjusted so that both coatings are applied in a single spraying step.
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10. Process as defined in claim 9, whereby the hydrophobic solution for the outer coating is applied to the forming, highly reactive inner sol-gel coating.
- 10 11. Process as defined in one of claims 2 to 10, whereby the double-coating system is baked at 50-450 °C for 2 min to 2 hours.
12. Object as defined in claim 1 and prepared as defined in one of claims 1 to 11, characterized in that it consists of a ceramic material, for example tiles or sanitary ceramic products, or it consists of enamel such as, for example, baking oven muffles, of metals, for example alloyed steel, of a plastic material or of glass/glass-ceramics such as, for example, internal baking oven panes or transparent fireplace doors which are exposed to high temperatures and/or considerable soiling and must be cleaned all the time to enable them to function properly.
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